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Magnavox

SERVICE MANUAL

5275

THE MAGNAVOX COMPANY • SERVICE DEPARTMENT
FORT WAYNE, INDIANA

MODELS W602, W603, W604, W605, W606, W607 & W608 AUTOMATIC RECORD PLAYERS



The Record Players shown above are representative of the types covered in this manual, i. e. Tall post, 11" turntable, Short post, 9 1/2" turntable.

GENERAL

All models of this series Magnavox Record Players are basically the same. Differences lie only in external appearance items and, in some cases, the type of drive motor.

Some versions in this series incorporate extended type control knobs while others use a short type knob assembly. The deluxe players covered in this manual utilize an 11" turntable disc.

The chart on Pages 16 & 17 shows the major differences in these various models. Other minor differences are identified in the exploded view diagrams and replacement parts lists.

All models are four-speed designed for operation at 16 2/3, 33 1/3, 45 and 78 RPM.

CHANGE CYCLE

The changer utilizes a "Velocity Trip" mechanism and the change cycle initiates by the fast inward motion of the pick-up arm when the stylus enters the lead-out groove at the end of the record.

As the tone arm tracks on the record, the Pick-up Positioning Finger "A" in Figure 3, which moves in unison with the tone arm, pushes against the Striker Feed Lever (111). The Striker Arm (121) is fed inward toward the turntable hub by the friction of its own weight resting on the curved end of the Striker Feed Lever (111).

As the record is playing, the Striker Arm (121) moves slowly toward the hub of the turntable, but the velocity of the Tone Arm is not sufficient to trip the mechanism; since the wiping action of the hub projection moves the Striker Arm (121) back with each revolution of the turntable.

However, when the stylus enters the lead-out groove at the end of the record, the velocity of the Striker Feed Lever (111) is sufficient to cause the Striker Arm (121) to move in ahead of the turntable hub projection.

The Striker Arm (121) is then "struck" by the hub projection and pushed far enough to cause the Drive Release Lever (131) to pivot and release the Locking Pin from the tab on the bottom of the Main Cam Gear Assembly (109). The assembly is then unlocked from the out-of-cycle or "Play" position, permitting the Drive Wheel (17) and its associated gear train to be pulled into contact with the motor pulley which drives the Main Cam Gear Assembly through the change cycle.

The Main Cam Gear Assembly makes one complete revolution in a clockwise direction during the change cycle.

As the Main Cam Gear (109) rotates, the Cam Gear Locating Roller "B" rides on various elevations on the Cam Gear (109), causing the Tone Arm Lift Lever (118) to pivot and raise the Pick-up Lift Spindle (103). This action raises the Tone Arm and determines its vertical travel.

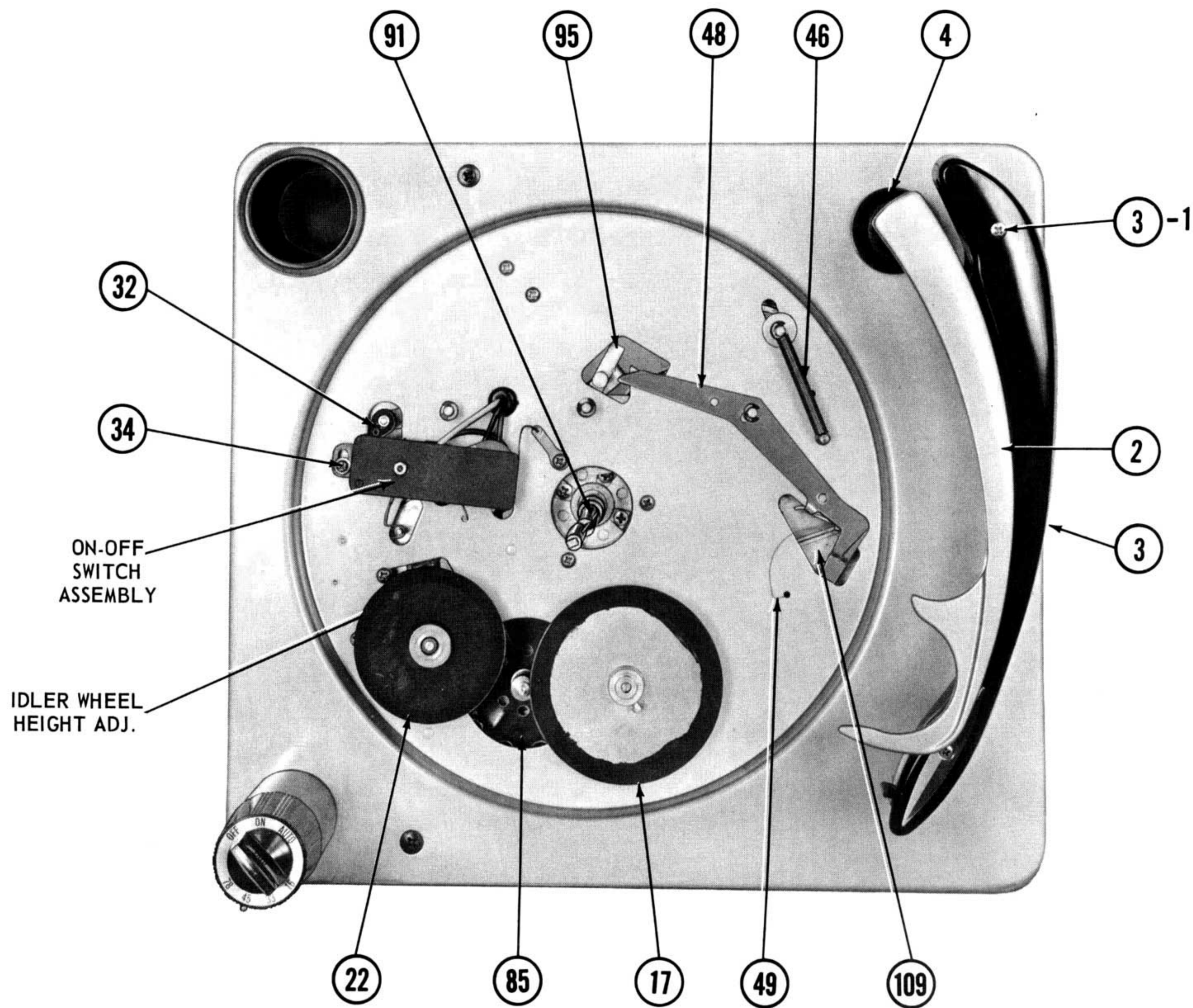


Figure 1--Top View of Base Plate with Turntable Removed

At the same time the Tone Arm Lift Lever (118) pivots, the Muting Switch Lever (141) is released and the Muting Switch (142) contacts close, shunting the pick-up cartridge.

In addition, as the Main Cam Gear Assembly (109) starts to rotate, the Cam Following Pin "C" in Figure 4 is forced to the outside groove of the Cam. This action forces the Tone Arm out to the point of maximum lateral travel.

With Cam still rotating, the Following Pin "C" is moved inward through the Test Track where width is determined and held constant by Lever "D" on the Cam. As the Main Cam Gear rotates, this lever is set by the wiping action against the eccentric cam which is the Tone Arm set-down adjustment. During the time the Following Pin "C" moves through the test track, the Tone Arm is carried inwardly; but "feels" the edge of the first record on the spindle and can move no further. However, the Following Pin "C" proceeds on through the test track causing the friction clutch between the pick-up arm and following pin to slip.

The following pin then moves out of the test track and is forced toward the outside edge of the cam, once again carrying the pick-up arm outward towards the

tone arm rest post. At a point determined by the size of the record "felt" by the tone arm, the Following Pin "C" will be forced out of the sloped groove, up ramp "E", across the smooth surface and proceed to move down the positioning groove. This action carries the Tone Arm inward to the point where it is lowered and the stylus contacts the record lead-in groove.

As the Main Cam Gear continues to rotate, the push-off roller on the bottom of the Cam contacts the Record Dropping Slide Assembly (134), forcing it outward away from the Cam. This action causes the Record Dropping Pawl to move laterally, resulting in the bottom record being pushed-off the spindle shelf to drop on the turntable.

As the Main Cam gear moves into the final portion of rotation, the tab located on the underside of the Main Cam, engages the locking pin on the Drive Release Lever (131) and withdraws the Drive Wheel (17) from the Motor Pulley. The Roller "F", on top of the Main Cam, then rides into the notch on the Cam Stop Lever Assembly (50) located on the underside of the base plate. The Cam Stop Lever Assembly (50) exerts pressure to hold the Main Cam Gear and Intermediate Gear Assembly (128) in the out-of-cycle position.

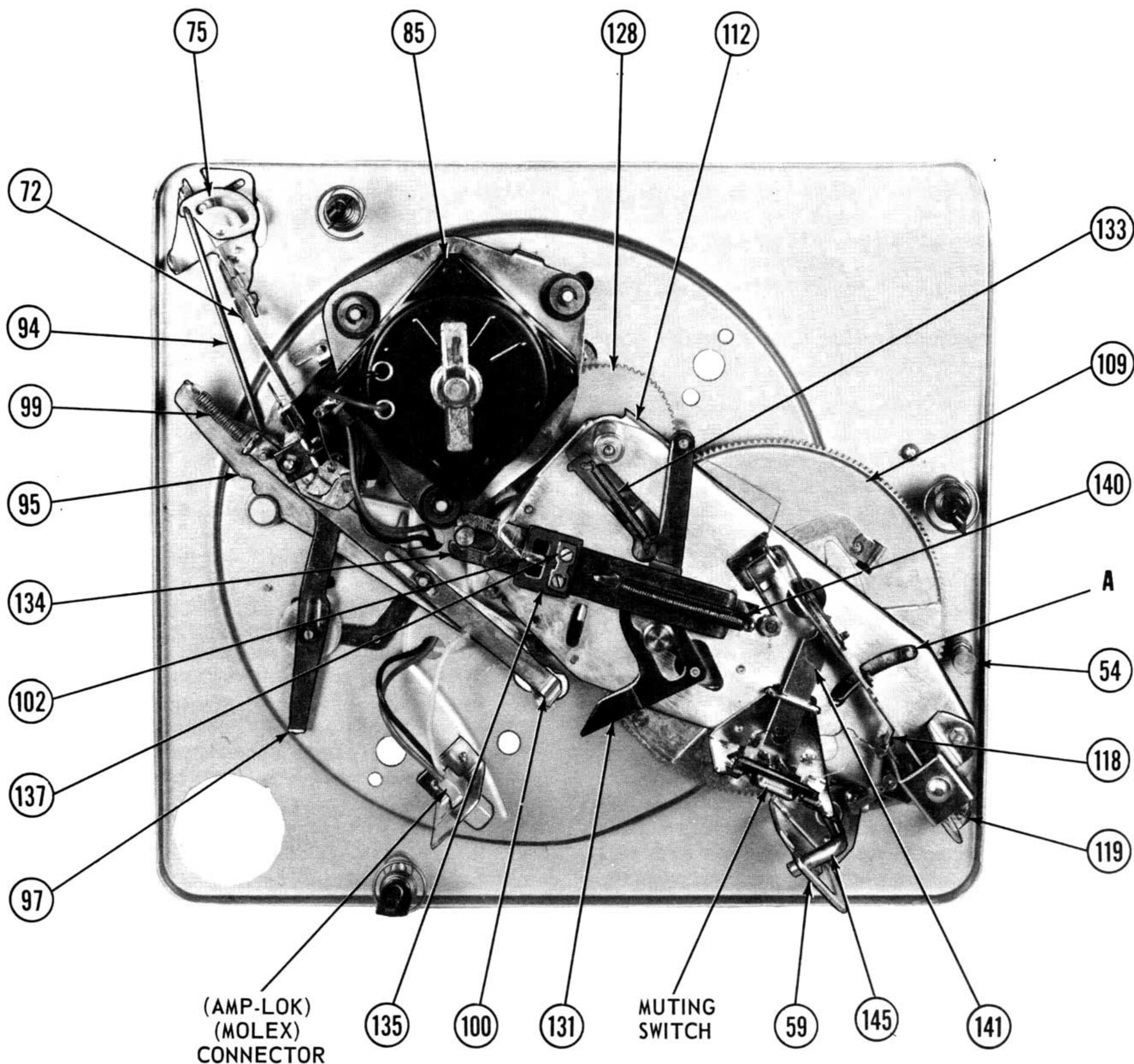


Figure 2--Bottom View of Base Plate

Automatic Shut-Off

The shut-off of the changer after the last record has been played is as follows:

The Main Cam Gear (109) begins to rotate and the Following Pin "C" moves down the Test Track, carrying the tone arm in toward the center of the turntable. Since the arm does not contact a record, the Following Pin "C" will now leave the test track, move through the sloped groove to the outside groove in the Cam, thus swinging the tone arm out to its rest position. At a point during the rotation of the Main Cam Gear, the Following Pin will lock the Shut-Off Lever on the Cam so the Shut-Off Lever Tab will be in its outer position (see Figure 4).

Just prior to the time the following pin locks the shut-off lever; Roller (F) on top of the Cam Gear contacts the Cam Stop Lever Assembly (50), causing the lever to pivot. The shut-off tab on the Main Cam Gear now makes contact with the Automatic Shut-Off Lever (48) which pivots away from the holding notch in the changer base plate. This pivoting action causes the opposite end of the Automatic Shut-Off Lever (48) to drive forward against the sloped end of the Control Bar Assembly which protrudes up through the base plate.

The Control Bar Assembly (95) pivots, the notched portion moves away from the grooved stud and both the Control Bar Assembly and Automatic Operating Lever (48) return to their original "OFF" position. This action causes; the Idler Wheel (22) to retract from the motor pulley, switch contacts to open, and the Off-On Control Knob to return to the "OFF" position.

SPEED CHANGE

The Speed Control Knob (Outer Knob) is rotated to the desired speed. The forward end of the Speed Change Slide Lever (72) is notched so that as it moves forward, the Idler Elevator Assembly (80) is lifted in steps. The Idler Wheel (22) is then raised to correspond to the various diameters on the Motor Pulley. This action is reversed as the Speed Change Slide Lever (72) is moved in the opposite direction.

A Tension Spring (78) secured to the bottom of the Idler Elevator Assembly (77) assures positive return to the next lower step on the motor pulley.

The Speed Change Lock Lever (74) prevents rotation of the Speed Control Knob when the Off-On control is in the "ON" position.

Remote Record Reject Operation

On some units a Record Reject solenoid is mounted on the changer sub-plate (see Figure 9). An extension of the solenoid piston protrudes through an opening in

the sub-plate and pushes against the striker arm on the velocity trip mechanism. The arm is then pushed back by the hub projection and unlocks the main cam gear to start the change cycle.

OPERATING INSTRUCTIONS

- 1. Lift Balance Arm and swing it out over the Tone Arm.
- 2. Place a quantity of records, not exceeding ten, on the record spindle and lower them to the spindle off-set step. To insure proper indexing, records of different sizes must be stacked with the largest size at the bottom. Be certain all records are of the same speed.
- 3. Place Balance Arm over the records and select the correct stylus.
- 4. Set Speed Control Knob (Outer Knob) to correct speed.

NOTE: This control cannot be rotated when the On-Off control is in the "ON" position.

- 5. Rotate the On-Off Control (Inner Knob) to its maximum clockwise position and release it when the turntable starts to revolve. The Tone Arm will now move over and set down on the first record. To reject, rotate this control clockwise to the "AUTO" position and release it.

Adapter for 45 RPM Records

- 1. Be sure the On-Off Control Knob is in the "OFF" position. Place adapter over spindle with the

- arrow on top of spindle pointing towards the front of changer.
- 2. Press downward on a adapter until it is firmly seated. The arrow will be pointing to the left of center when the adapter is in place.
- 3. To remove the adapter, pull it straight up from the spindle.

Manual Play

- 1. Lift the Record Balancing Arm and swing it out over the Tone Arm.
- 2. Place the record on turntable spindle.
- 3. Set the Turntable Speed Control (Outer Knob) to correspond to the type of record being played. Select the correct stylus.
- 4. Rotate the On-Off clockwise to the "ON" position.
- 5. Manually place the stylus gently on the record. After the record has been played, the tone arm will return to its rest position and the instrument will shut-off automatically. If only a selected passage is to be played, the tone arm can be lifted and placed on its rest manually after the passage is completed.

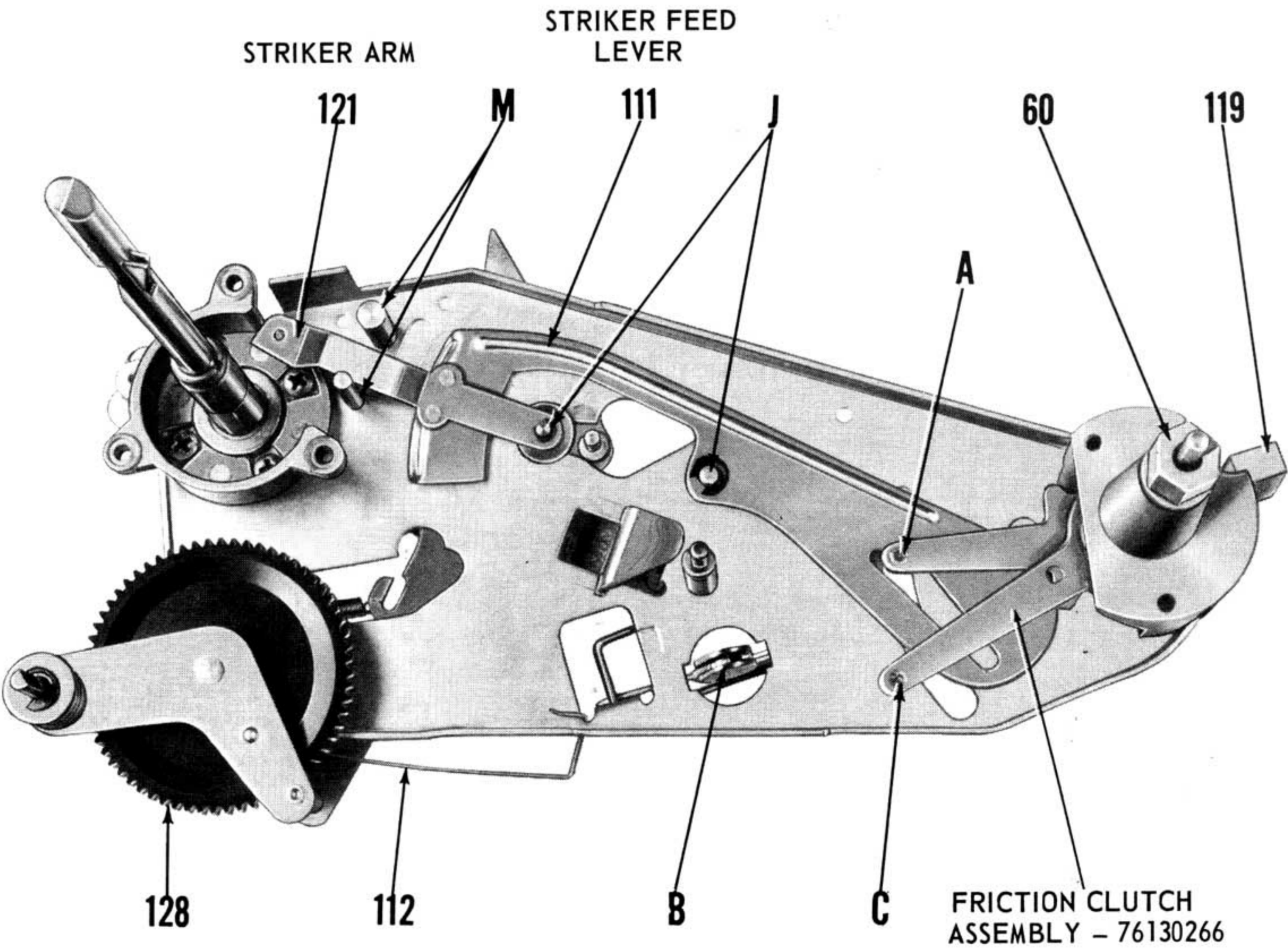


Figure 3--Sub-Plate Assembly with Cam Gear Removed

ADJUSTMENTS

Tone Arm Set-Down

All changers in this series provide automatic positioning for the various sizes of records by "sampling" the outside diameter of the bottom record resting on the spindle shelf. The stylus then contacts the record, after it has fallen to the turntable, approximately 1/16" from the outer edge, or on a diameter 1/8" smaller than the original sampling made by the tone arm.

This adjustment has been accurately set at the factory, however, should adjustment be required in the field, a screwdriver adjustment "G" (Figure 5) is provided in the base plate just forward of the tone arm pivot. This adjustment consists of an eccentric cam which contacts Lever "D" on the Main Cam Gear (See Figure 4).

Rotating this eccentric cam moves Lever "D" in a lateral direction and causes the Test Track on the Main Cam Gear to become wider or narrower.

The tone arm will set down further inward when the test track is made wider, and will set down on a larger diameter when the test track is made narrower.

Since only one half turn of the Adjustment Screw "G" covers the entire range of the Set Down Adjustment, it is suggested that the screw be rotated only a slight amount at any one time.

It is usually necessary to repeat this adjustment several times checking the set down position of the tone arm after each adjustment.

Pickup Muting

The pickup cartridge is muted during change cycle so that any slight mechanical vibrations of the mechanism will not be picked up by the cartridge and, therefore, cannot reach the amplifier input circuits.

The muting switch is actuated by Lever (141) which forces the switch contacts to make, shunting the pick-up cartridge, as soon as the Main Cam Gear (109) begins to rotate.

To check that the Muting Switch is breaking properly proceed as follows:

1. Place any size record on the record spindle. Turn the changer on and allow it to proceed to the playing position. Turn changer off in this position.

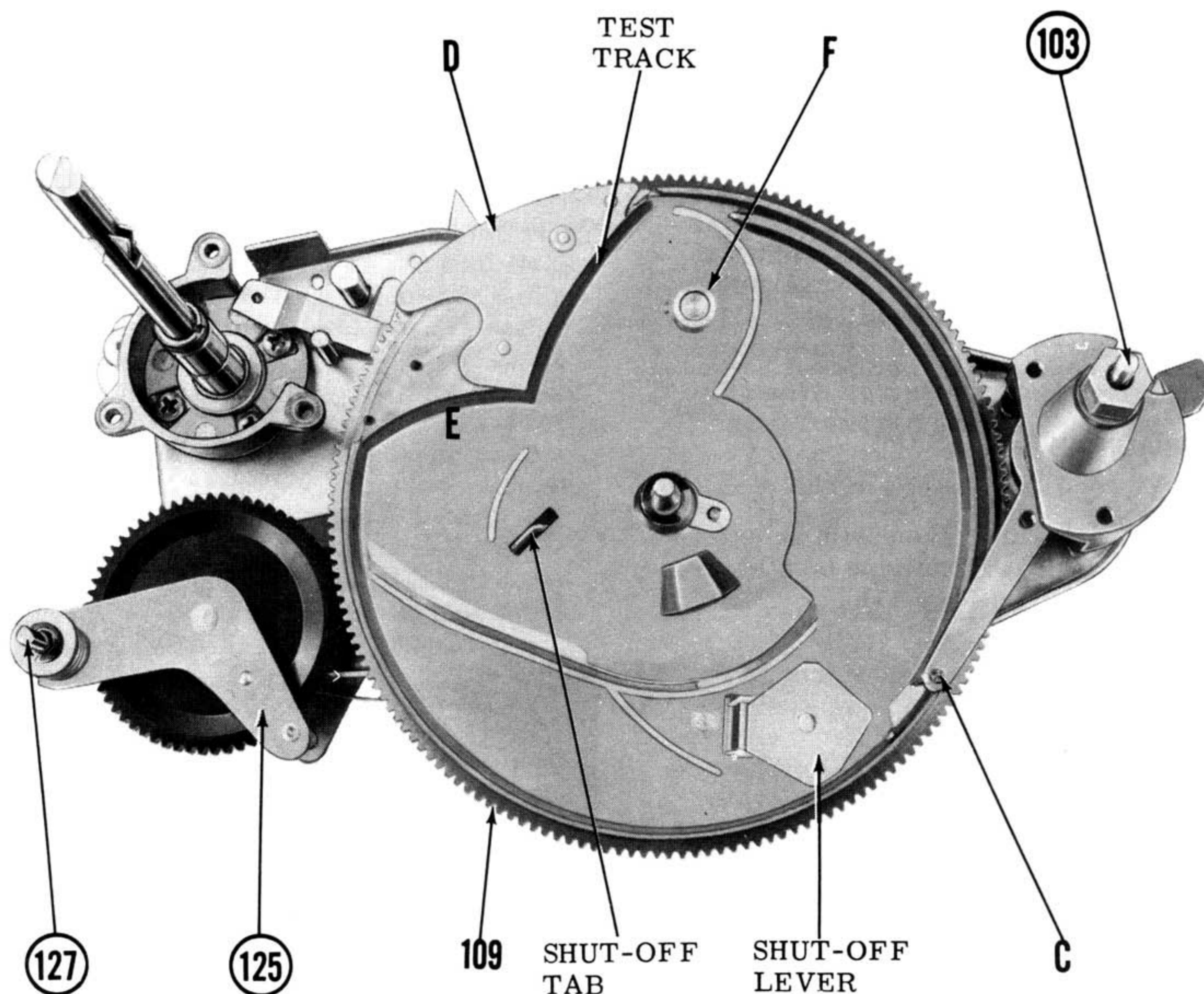


Figure 4--Top View of Sub-Plate Assembly

2. Check the gap between the muting switch contacts to be certain that a strip of newspaper or a metal "feeler" gauge .003" thick can be inserted between them (this is minimum gap).
3. If there is no gap, or if the gap is insufficient, the tag end of the Switch Operating Lever (141) may be slightly bent away from the sub-plate assembly.

Pickup Tracking Adjustments

Improper pickup tracking may be caused by any one of the following:

1. Insufficient slack in pickup leads.

Check to be sure that the pickup leads are free and that sufficient slack is maintained between the rear of tone arm and baseplate.

2. Cam Following Pin "C" touching bottom of cam groove.

Check to see if the Cam Following Pin "C" is rubbing bottom of cam groove when in the "playing recess". This pin is properly positioned when it touches halfway up ramp "E" (see Figure 4).

This adjustment is made by rotating screw "I" (Figure 7).

3. Striker Feed Lever (111) resting on sub-plate.

Check to see that the Striker Feed Lever (Figure 3) is perfectly free on its pivot "J" and is contacting the sub-plate at its forward end (under the Striker Arm). At the same time the Striker Feed Lever should be clear of the sub-plate at the rear end by approximately 1/16". If this clearance is insufficient, it may be increased by inserting a screwdriver between the Striker Feed Lever (111) and sub-plate and exerting a slight upward pressure.

4. Chipped or damaged stylus.

If it is suspected the pickup stylus is worn or damaged, replacement is to be made with an exact replacement stylus of the original type (see Pickup and stylus information on Page 11).

5. Insufficient stylus pressure.

See "Stylus Pressure Adjustment".

Tone Arm Height

The Tone Arm Height Adjustment Screw "K" (Figure 5) is used to set the height to which the tone arm raises during the change cycle. During the change cycle the tone arm is lifted up and moved out over the rest post. During this time the clearance between the top of the tone arm and the underside of the next record on the shelf should be approximately 1/4". To obtain this setting, rotate screw "K" clockwise to lower the tone arm or counter-clockwise to raise it.

Record Dropping Adjustment

Rotate the Main Cam Gear (109) by hand until the Record Push-Off Pawl travels to its maximum position between the spindle shelf. At this point the Pawl should protrude just slightly beyond the spindle shelf.

If the Pawl does not protrude beyond the spindle shelf, loosen the two screws (137) and move the Pawl Adjustment Plate (135) until the Pawl does protrude beyond the shelf. NOTE: The Pawl Adjustment Plate (135) slides horizontal to, and directly across the Record Dropping Slide (134).

Stylus Pressure Adjustment

Use a suitable gram scale and following the manufacturers instructions check the stylus pressure. Stylus pressure is set by rotating screw "L" in Figure 5. Stylus pressure is to be set for 3 grams plus or minus 1/2 gram.

Idler Wheel Height Adjustment

The Idler Wheel (22) should be adjusted so that it contacts the motor pulley in the center of the proper step, making certain the lower face of the Idler Wheel does not rub on the flange of the next lower step of the motor pulley.

An adjustment screw located on the baseplate next to the Idler Wheel (see Figure 1) is provided to adjust the vertical positioning of the Idler Wheel. This screw should be turned clockwise to raise the Idler Wheel, counter-clockwise to lower it.

IMPORTANT NOTE: When making this adjustment always be sure the changer is supported from the baseplate and that the motor is completely suspended.

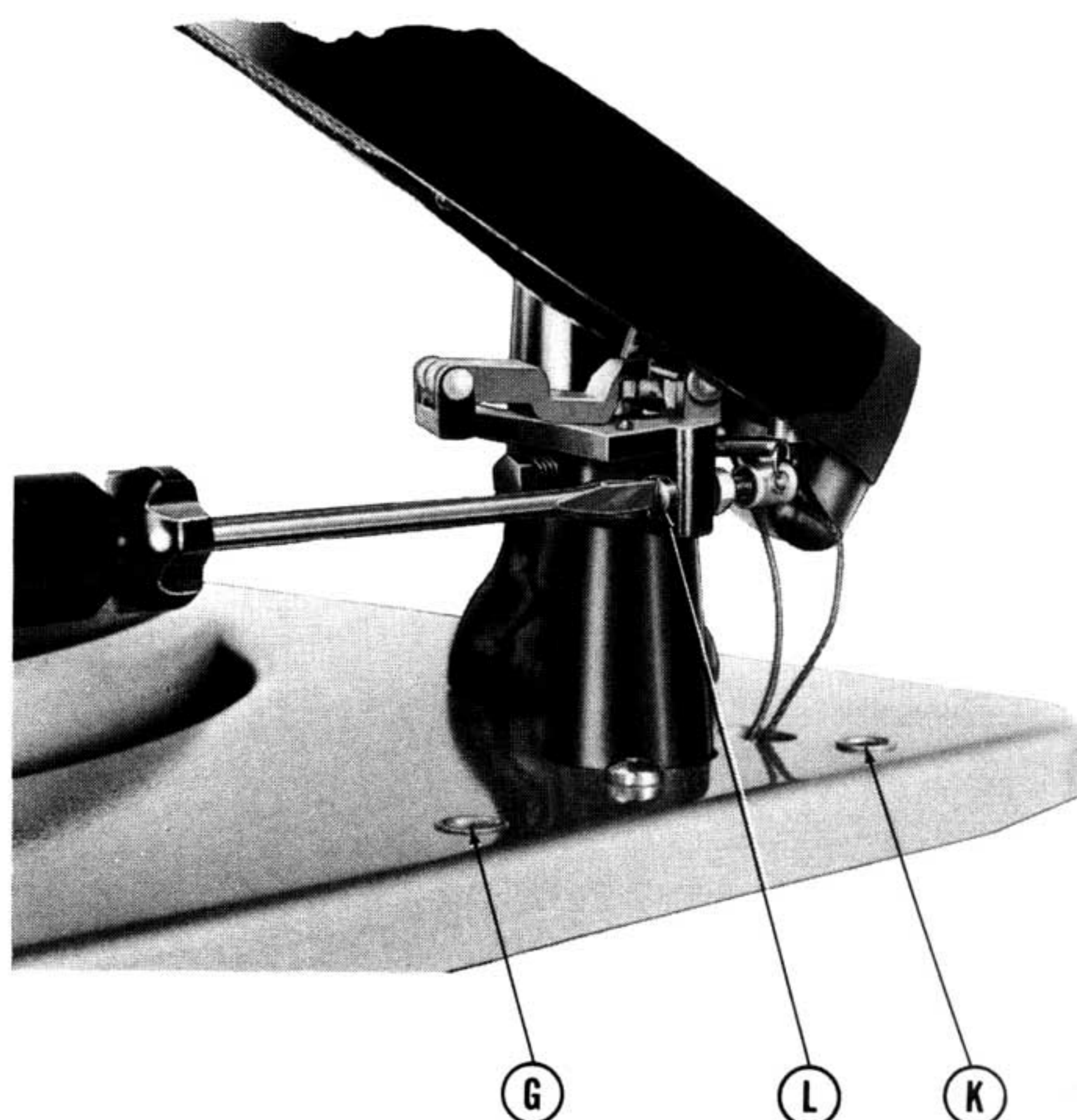


Figure 5

AC Switch Adjustment

Remove Turntable as outlined under "Turntable Removal". Rotate the On-Off Control Knob to the "ON" position.

Loosen Switch Adjustment Screw (34) and remove Switch Cover (29) by removing Nut (31) and Washer (30).

Slowly rotate switch body clockwise until the contact strip (farthest from the actuator) is moved approximately 1/64" from its rest. Tighten Switch Adjustment Screw (34) while holding the switch in this position. Replace Switch Cover, Washer and Nut.

Automatic Trip

Failure of the mechanism to trip at the end of a record may be due to any one of the following:

INSTRUCTIONS FOR SERVICING AND REPLACEMENT OF PARTS

Turntable Removal

1. Place the On-Off control knob in the "OFF" position and remove the E-Clip (9) from center of turntable.
2. Remove turntable by grasping outside edge and lifting straight upward with a slight back and forth rotary motion.
3. Check that the Ball Thrust Cage (14) and Washers are free from foreign matter and lubricated with a small quantity of light grease. The Ball Race Cage is to be replaced with the open side facing downward. There should be a steel thrust washer (15) immediately below and immediately above the Ball Race Cage (14). (See Exploded View in Figure 14). A Resilient Washer (12) is fitted between the upper-most steel washer and the turntable hub and self-aligning "dimpled" washer is located below the bottom Thrust Washer.
4. Make certain that the Idler Wheel (22) and Drive Wheel (17) are in their retracted positions and will clear the turntable rim when it is replaced.
5. Replace Turntable and secure E-Clip.

NOTE: Besides securing the turntable, the E-Clip also retains the Record Spindle to the Spigot Housing. The Spigot Housing (93) and spindle are notched so as to accept the center protrusion from the E-Clip. Be sure the E-Clip seats properly otherwise the Record Spindle Assembly will become loose.

Idler Wheel Removal and Replacement

1. Remove Idler Wheel Mounting Screw (24) and Fiber Washer (23).
2. Lift Idler Wheel (22) straight up from its spindle.
3. Replace Idler Wheel by reversing the procedure just described, being certain that all fiber washers

1. Tightness or dirt on Pivots "J", see Figure 3.

Remove C-clips from Pivots "J" and remove Striker Feed Lever and Striker Arm. Clean Levers and Pivots and replace. Re-fit C-clips and check to be sure the Levers will travel their full excursion when the sub-plate is tilted in a 45 degree angle.

2. Striker Feed Lever (111) resting on sub-plate at rear end.

Insert a small screwdriver between the sub-plate and Striker Feed Lever (111) and exert a slight upward pressure. The Striker Feed Lever should be perfectly free on its pivot contacting the baseplate at its forward end only.

3. Dirt on Pins labeled "M", Figure 3.

Clean Pins "M" to be sure they are completely free of any dirt and grease of any kind.

under the Idler Wheel are replaced exactly as they were found.

4. Check that the Idler Wheel rotates freely.
5. Make sure that the Idler Wheel contacts the Motor Pulley correctly and adjust as outlined under "Idler Wheel Height Adjustment".

Motor Removal and Replacement

1. Remove Turntable as outlined under "Turntable Removal".
2. Remove Switch Cover (29) by removing Mounting Nut (31) and Shakeproof Washer (30).
3. Remove ground lead and unsolder the black wire from the foremost switch contact.
4. Clip the red wire which connects to the AC socket (this lead can be spliced when the motor is replaced).
5. Remove the 3 motor mounting C-clips and washers.
6. The motor can now be lifted from the mounting studs complete with grommets (84) and mounting plate.
7. Reverse the foregoing procedure to reassemble. If the switch contacts have been removed, be sure they are positioned correctly before replacing switch cover. (See "AC Switch Adjustment").

AC Switch Replacement

1. Remove Nut (31) and Washer (30) and lift off Cover (29).
2. Lift out Contact Separator (25) and switch contacts (26).
3. Remove Adjustment Screw (34) and remove switch housing mounting screw from under baseplate.
4. Reverse the foregoing procedure to reassemble.

Idler Swivel Arm Removal and Replacement

1. Remove Turntable as outlined under "Turntable Removal".
2. Remove Idler Wheel as outlined under "Idler Wheel Removal and Replacement".
3. Set Speed Control to "16" and turn the On-Off Control Knob to the "ON" position.
4. Remove C-clip (67) from the top of the Swivel Arm (68) and lift Swivel Arm from spindle.
5. Reverse the foregoing procedure for replacement of new Swivel Arm.

NOTE: After installing new Swivel Arm, re-adjust Idler Wheel height as outlined under "Idler Wheel Height Adjustment".

Control Knob Removal (Extended Type)

1. Remove On-Off Control Knob (36), C-Clip (37), and Washer (38).
2. Remove inverted hex-nut in well of Control Indicator (41). A special tool, Magnavox Part No. 170442-1, is available for this purpose (see Figure 6).
3. Lift the Control Indicator and Speed Change Knob off shaft.
4. Reverse the foregoing procedure for Control Knob Replacement.

NOTE: When replacing the Speed Control Knob, be sure the bottom pin seats properly into the slot provided for it in the Speed Change Ramp Assembly (72).

Control Knob Removal (Short Type)

1. Remove On-Off Control Knob by lifting straight upward.
2. Remove C-clip inside well of Speed Change Knob and lift off Speed Change Knob.
3. Reverse the foregoing procedure for Control Knob Replacement.

NOTE: When replacing the Speed Control Knob, be sure the bottom pin seats properly into the slot provided for it in the Speed Change Ramp Assembly (72).

Tone Arm Removal and Replacement

1. Unsolder Pickup leads from Muting Switch (142).
2. Loosen the Hex-head screw (3-20) in Tone Arm Swivel Bracket and lift entire Tone Arm Assembly from Mounting post.
3. Reverse the foregoing procedure for Tone Arm Replacement.
4. Check the Tone Arm set-down as outlined under "Tone Arm Set-Down Adjustment".

Sub-Plate Removal and Replacement

1. Unsolder pickup leads from Muting Switch (142) and remove turntable as outlined under "Turntable Removal".
2. Remove the Drive Wheel retaining screws (18) and lift off Drive Wheel (17).
3. Remove Tone Arm as outlined under "Tone Arm Removal and Replacement".
4. Remove three self-tapping screws (92) around Turntable Spigot Housing and two from around the tone arm swivel base. As the last of these screws is removed, the entire sub-plate mechanism will fall free, therefore, a hand should be placed below to avoid damage when the sub-plate falls clear. The sub-plate now appears as shown in Figure 4.
5. Reverse the foregoing procedure to re-install Sub-Plate Assembly. It will be necessary to realign the Drive Wheel (17) so that it contacts the motor pulley exactly in the center of the 45 RPM step. NOTE: Be sure the motor is completely suspended during this adjustment.



* Available as Wrench Kit number 170655-1

Figure 6

Main Cam Gear Removal and Replacement

1. Remove Sub-Plate Assembly as outlined under "Sub-Plate Removal and Replacement".
2. Rotate the Cam Gear by hand to the out-of-cycle position and lift the Cam Following Pin "C" clear of Cam edge.
3. Remove C-Clip (107) and Washer (108) from Cam Spindle. The Cam Gear may now be lifted from the spindle.
4. Reverse the foregoing procedure to replace Main Cam Gear.

Intermediate Gear Removal and Replacement

1. Remove Sub-Plate Assembly as outlined under "Sub-Plate Removal and Replacement".
2. Remove Mounting Nut (138) and Washer (139).
3. Remove C-Clip (132) holding gear operating lever.
4. The Intermediate Gear complete with Carrier Bracket (125) and Drive Pinion may now be lifted clear.
5. Reverse the foregoing procedure for replacement of Intermediate Gear and Carrier Assembly.

NOTE: Do not over tighten Nut (138) when re-installing Intermediate Gear Assembly or Intermediate Gear Boss will bind against top of Sub-Plate.

Tone Arm Pivot Removal and Replacement

1. Remove Sub-Plate Assembly as outlined under "Sub-Plate Removal and Replacement".
2. Remove Cam Gear (109) as outlined under "Main Cam Gear Removal and Replacement".
3. Remove the two self-tapping screws (106) on underside of Sub-Plate.
4. Lift Pivot Assembly clear of Sub-Plate.
5. Reverse the foregoing procedure to refit Tone Arm Pivot Assembly.

Tone Arm Clutch Removal and Replacement

1. Remove Tone Arm Pivot Assembly as outlined under "Tone Arm Pivot Removal and Replacement."
2. Loosen the two screws in Clutch Boss (see Figure 7) and remove Clutch Assembly.
3. Reverse the foregoing procedure to refit Clutch Assembly leaving the two screws in Clutch Boss loose.
4. Manually place the Tone Arm over rest post clamping it into position over post.

5. Place the Tone Arm Positioning Lever "A" in Figure 3) in its maximum outward position.
6. Insert a small screwdriver between Clutch Boss and top of Sub-Plate and raise the entire Clutch Assembly upward on Pivot Tube (leaving only approx. .005" end play) and tighten the two set-screws in Clutch Boss.

Record Spindle Removal and Replacement

1. Remove Pawl Lift Spring (102) from bottom of Sub-Plate Assembly.
2. Remove E-Clip (9) from Center of turntable.

NOTE: The center tab on the E-clip locks the Record Spindle to the Spigot Housing.

3. The Record Spindle can now be removed by pulling it straight out from the Spigot Housing.
4. Reverse the foregoing procedure to reassemble.

NOTE: When seating Record Spindle into Spigot Housing, it will be necessary to hold the Record Dropping Slide (134) inward to allow the lower end of the Record Dropping Pawl to slip through the slot in the Record Dropping Slide Assembly (134).

5. Replace Pawl Lift Spring (102) and E-Clip (9) being certain the center tab on E-clip fits into the notch in Spigot Housing (93).

Mute Switch Replacement

A new type Mute Switch Assembly was incorporated in late production and this new assembly (76130128) is illustrated in Figure 10. In this new Muting Switch the Actuating Lever (141) fits into a slot in the Tone Arm Elevating Lever (118) rather than under the lever as in the earlier version. Also, an Actuating Lever Spring (76201010) is incorporated, as shown in the illustration, to insure positive action.

Muting Switch Kit (170584-1) shown in Figure 11, has been made available for the purpose of installing the new-type mute switch on earlier version record players. In this case the Muting Switch Actuator Lever is different since it is required to fit underneath the elevating lever.

For correct Mute Switch replacement refer to chart on Pages 16 & 17.

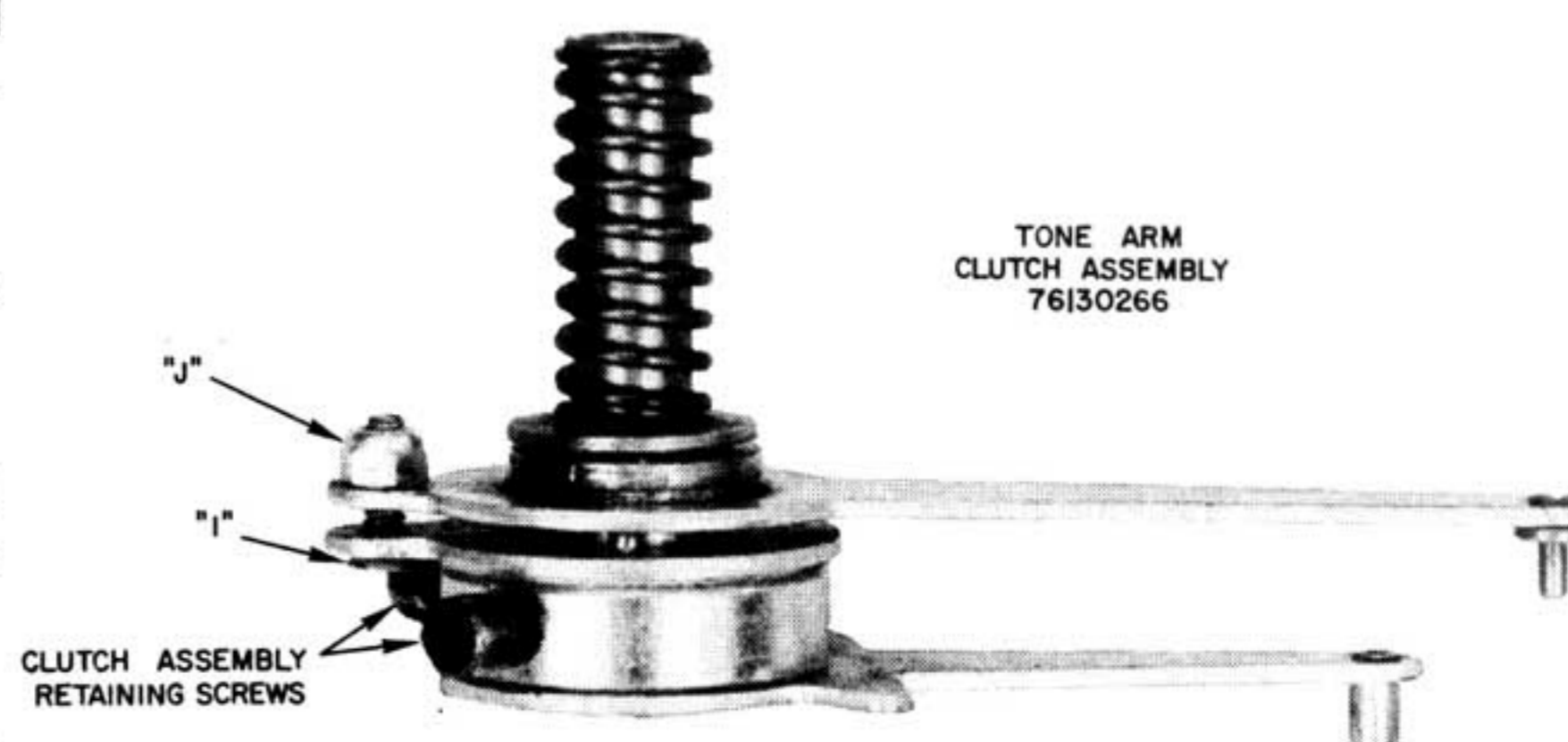


Figure 7

POWER CONNECTIONS WHEN CHANGER IS INSTALLED
IN AC-DC TYPE UNIT

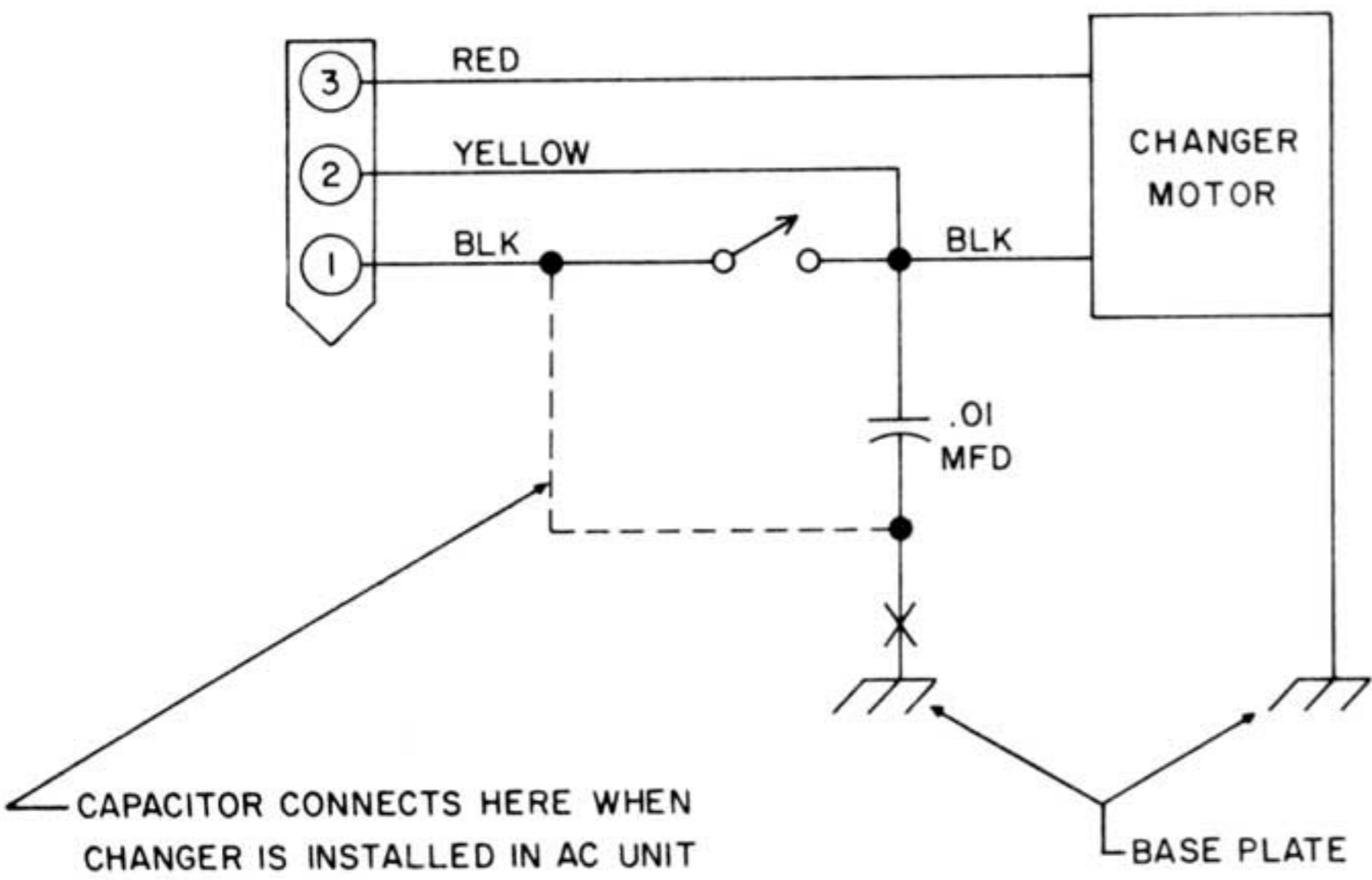


Figure 8

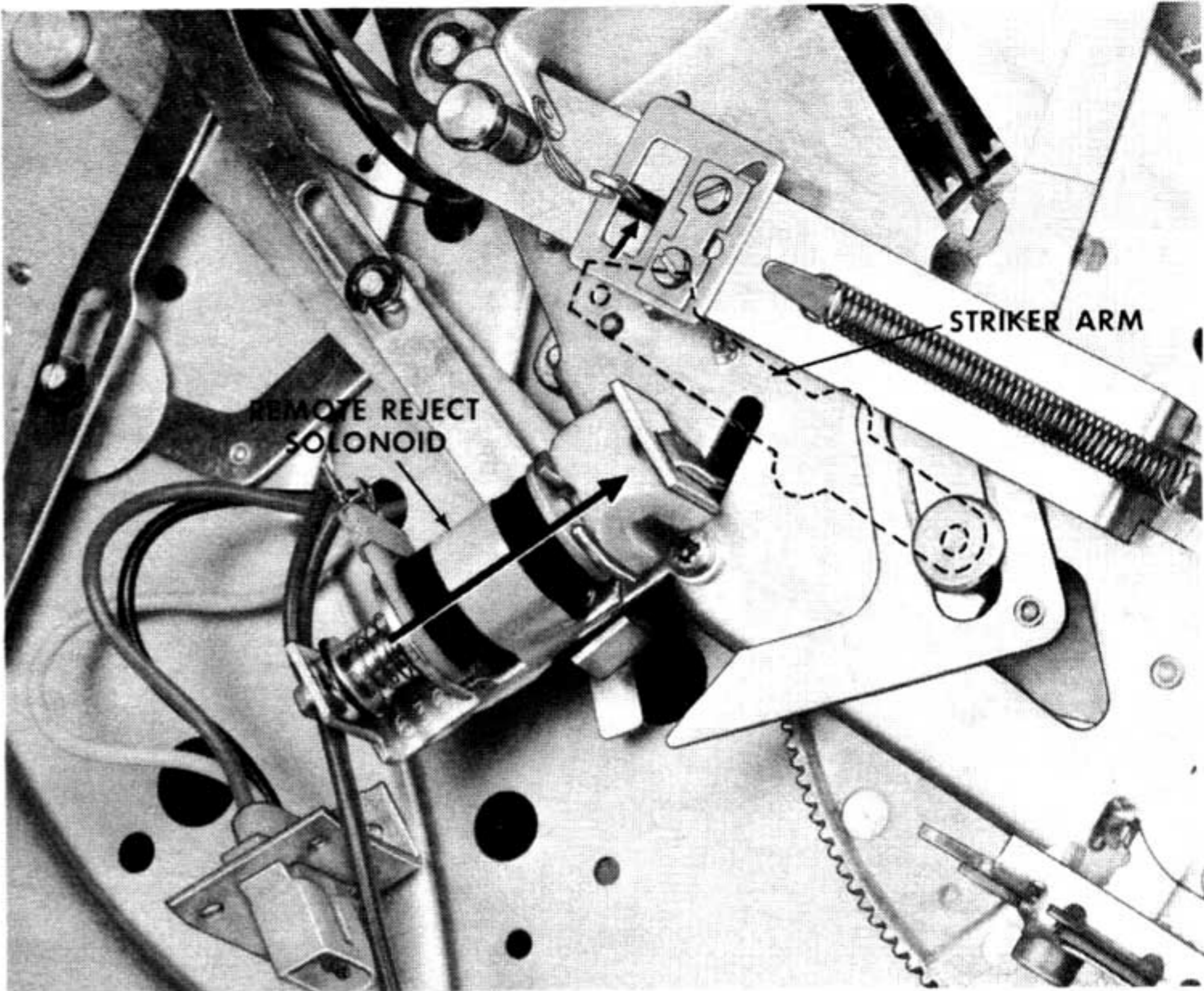


Figure 9

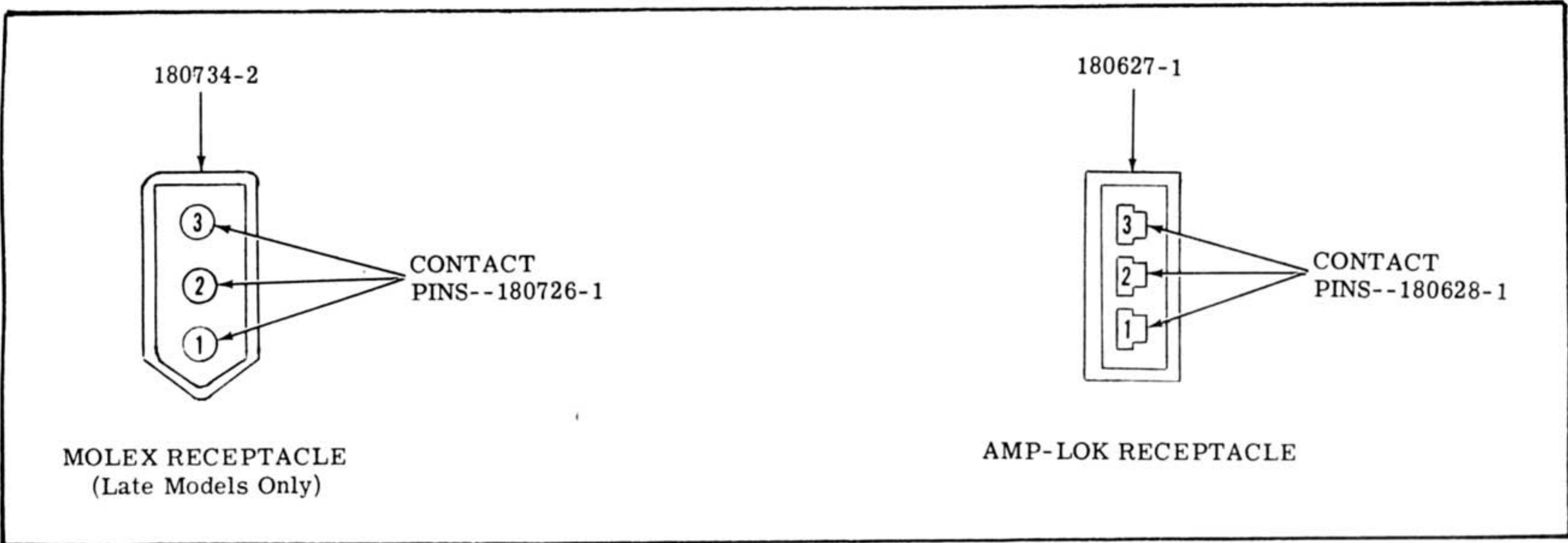


Figure 10

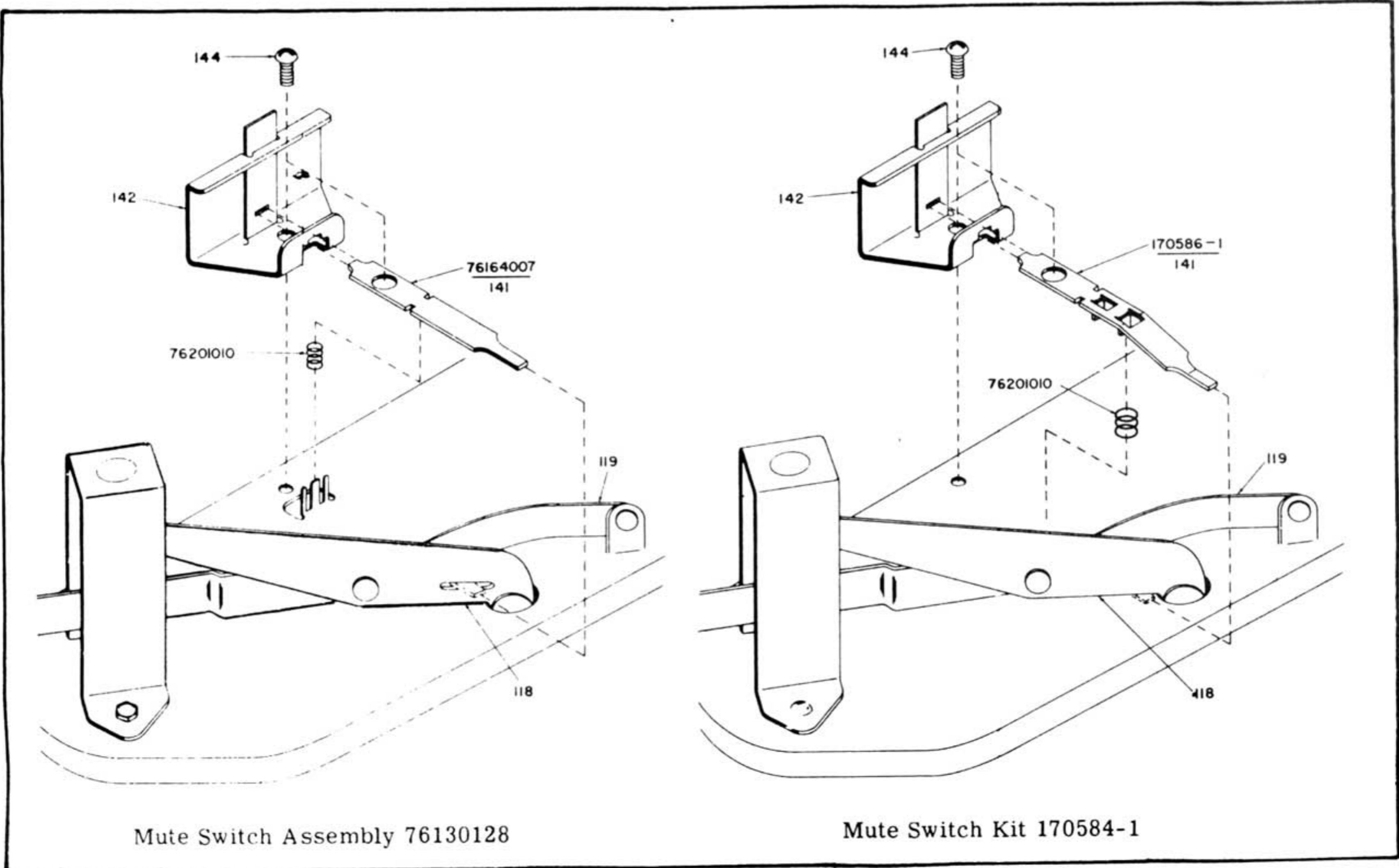
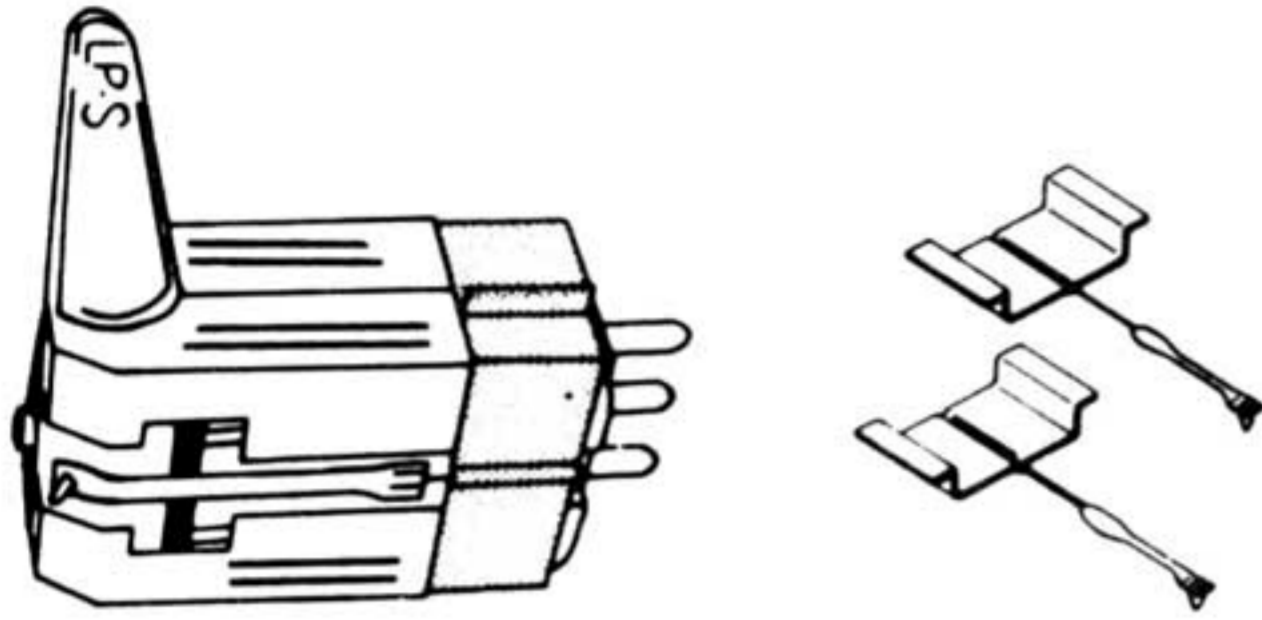
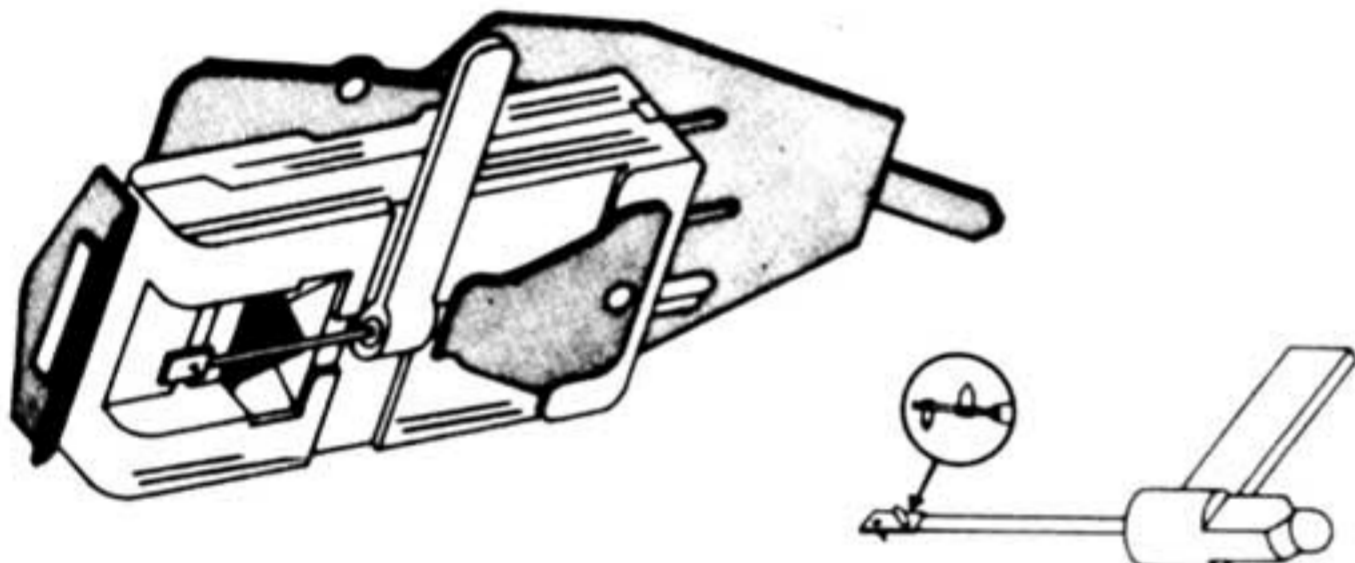
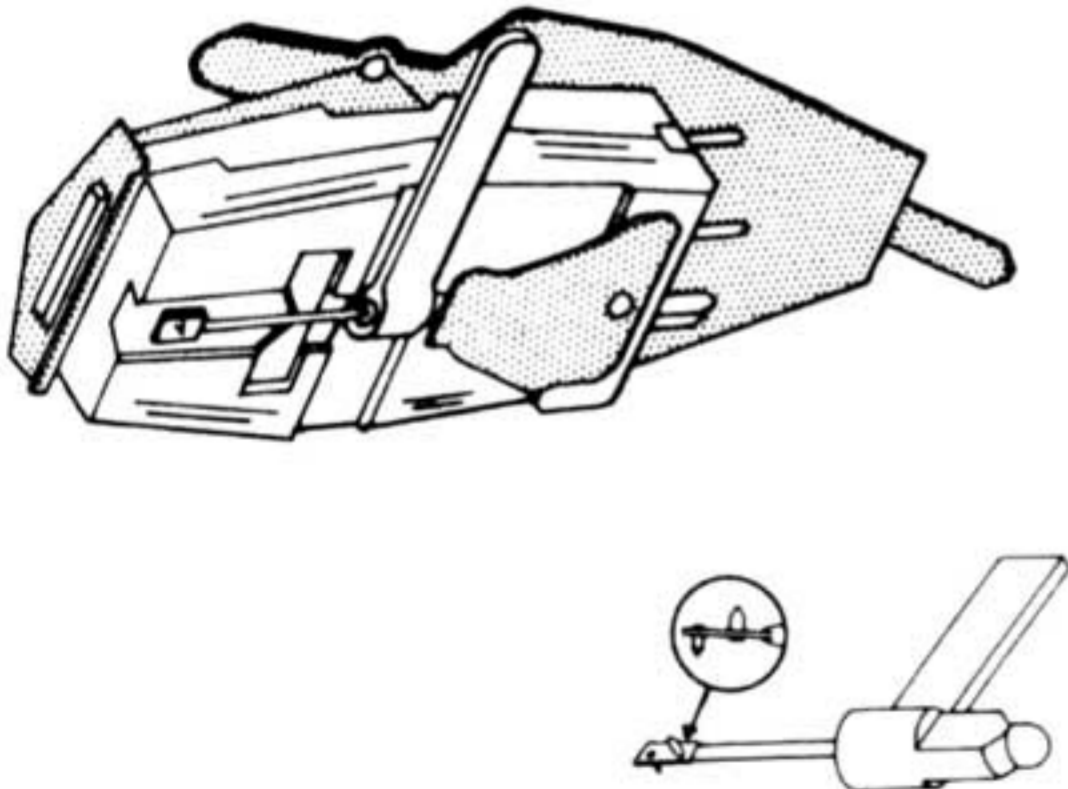
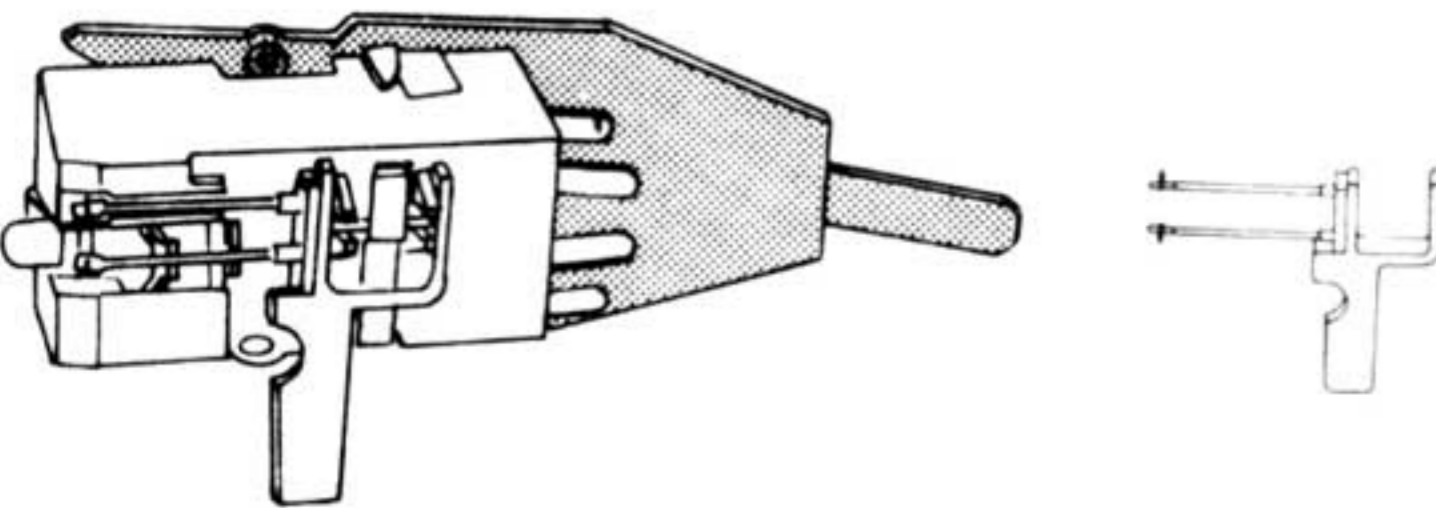


Figure 11

PICK-UP AND STYLUS REPLACEMENT GUIDE

PICKUP & NEEDLE		NEEDLE TIP		NEEDLE	PICKUP
ILLUSTRATION		MATERIAL	SIZE	PART NO.	PART NO.
TURNOVER CARTRIDGE 		Sapphire	.003	560235-2	560290-1 (with needles)
USES TWO NEEDLES		Diamond	.0007	560234-2	560290-3 (less needles)
NOTE: This pickup is supplied without mounting bracket. When installing a new pickup the original mounting bracket should be used.					
TURNOVER NEEDLE 		Sapphire	.003	560306-2	560305-1 (with needles)
USES TWO NEEDLES		Diamond	.0007		560305-2 (less needles)
TURNOVER NEEDLE 	Gray Body	Sapphire	.003	560312-2	560310-1 (with needle)
		Diamond	.0007		560310-2 (less needle)
	White Body	Sapphire	.003	560312-2	560315-1 (with needle)
		Diamond	.0007		560315-2 (less needle)
	Black Body	Sapphire	.003	560339-1	560340-1 (with needle)
		Diamond	.0007		560340-2 (less needle)
USES ONE NEEDLE WITH TWO TIPS					
TURNOVER NEEDLE 		Sapphire	.003	560331-3	560325-1 (with needle)
USES ONE NEEDLE WITH TWO TIPS		Diamond	.0007		560325-2 (less needle)

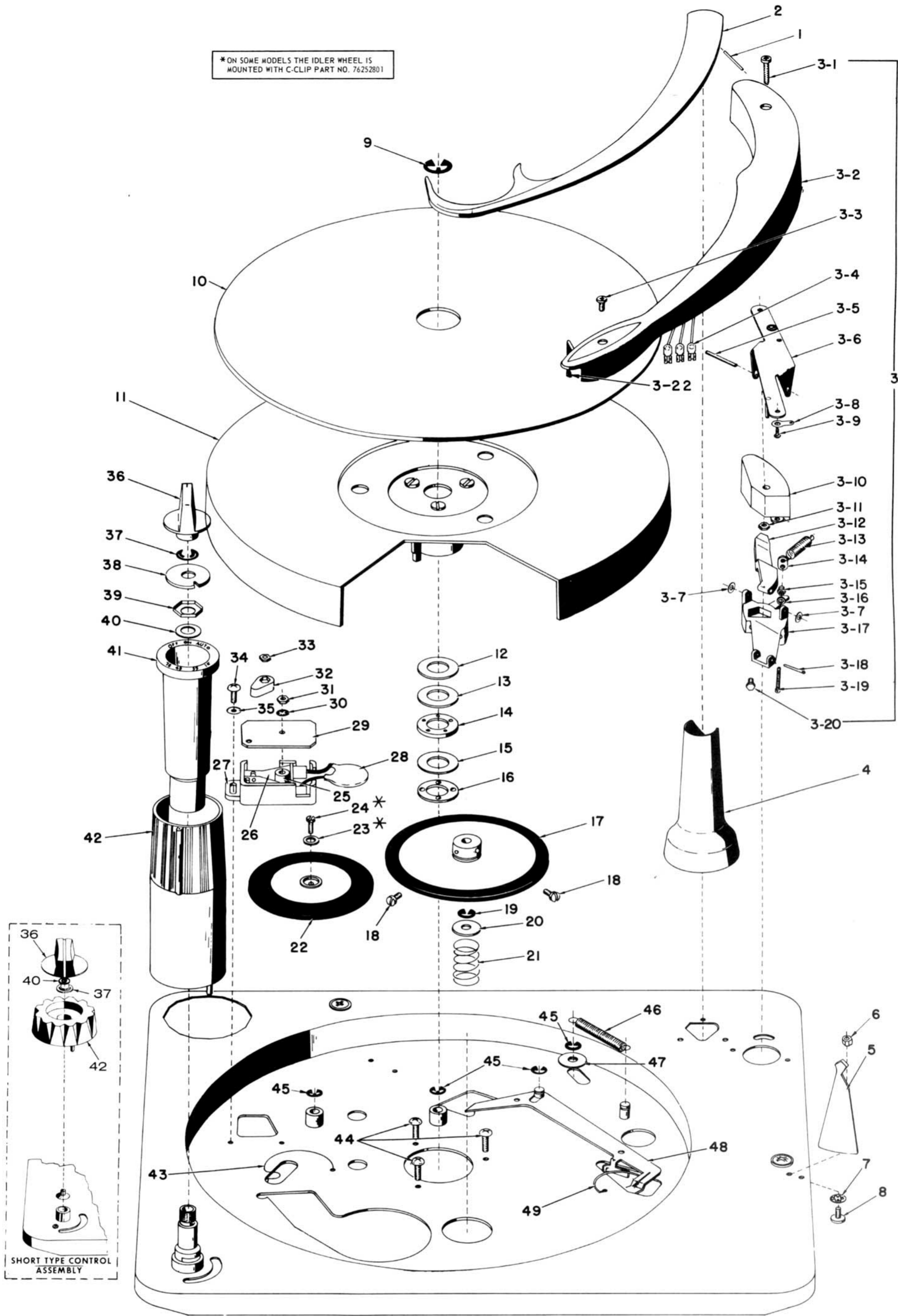


Figure 12--Exploded View of parts above Base Plate

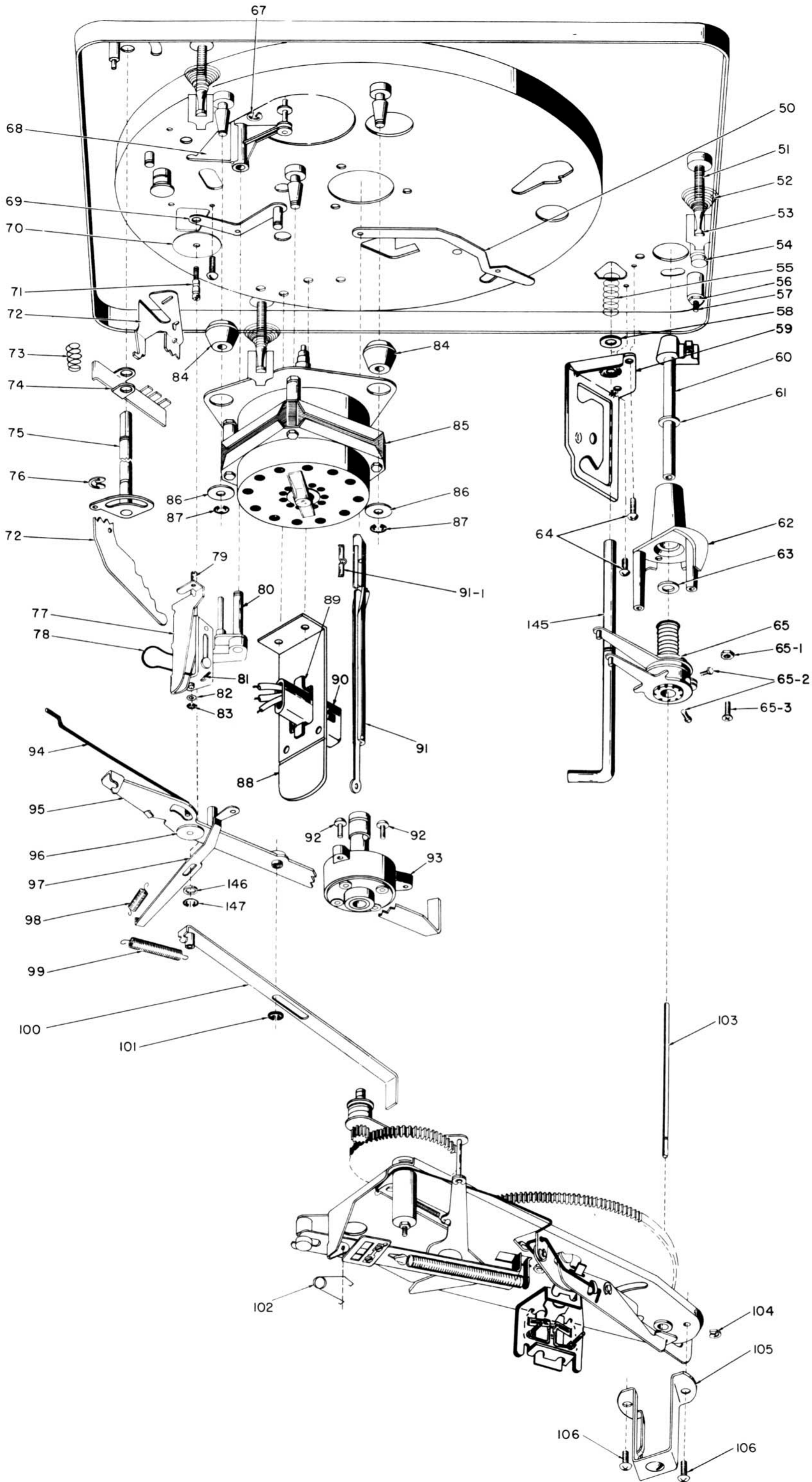


Figure 13--Exploded View of parts below Base Plate

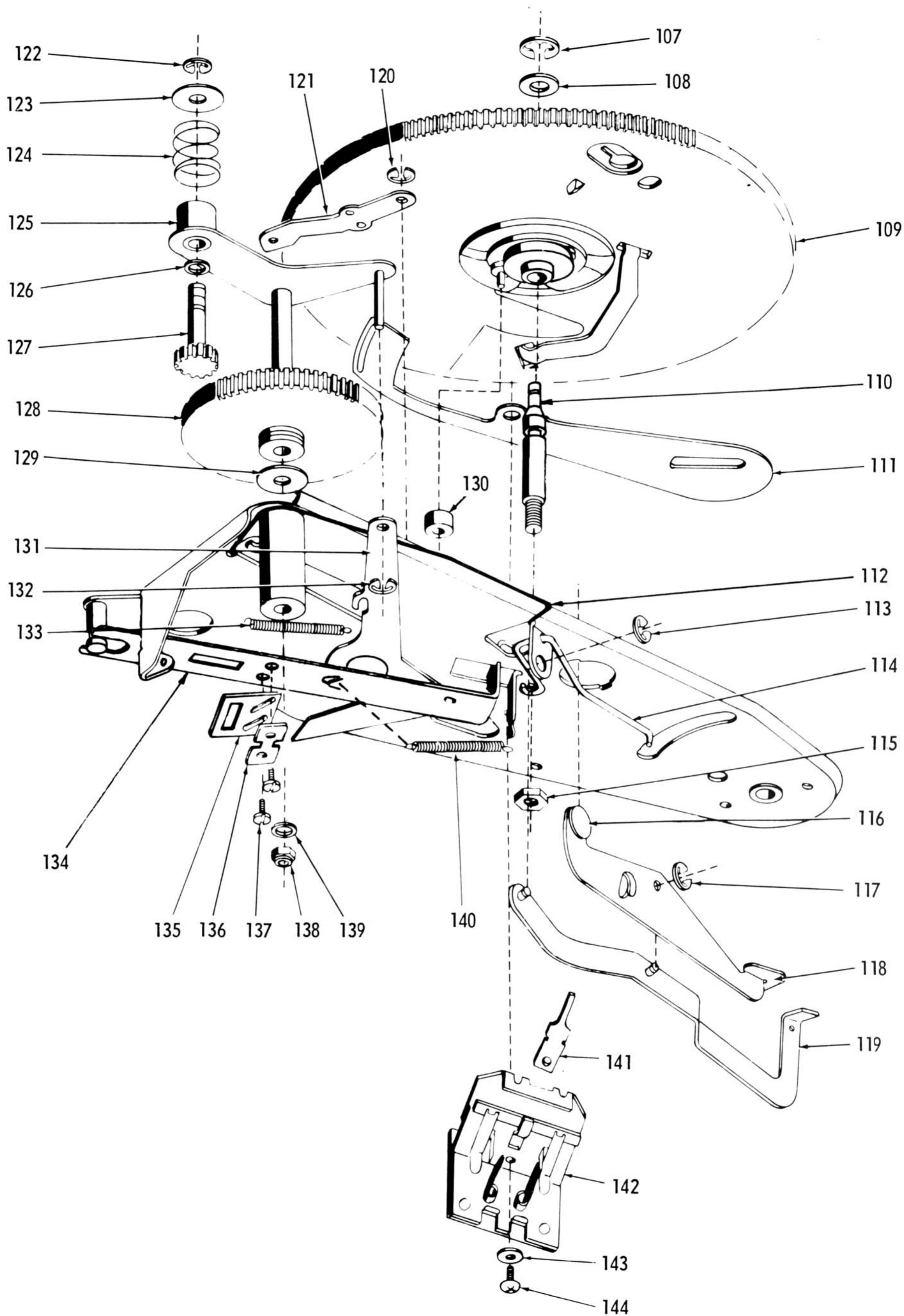


Figure 14-- Exploded View of Sub-Plate Assembly

REPLACEMENT PARTS LIST

REF. NO.	DESCRIPTION	PART NO.
1	Balance Arm Retaining Pin	76252604
2	Balance Arm (Gold)	76190048
2	Balance Arm (Silver)	76190049
2	Balance Arm (Chrome)	76190019
3	Tone Arm Assembly (less Pickup)(Black)	76125013
3	Tone Arm Assembly (less Pickup)(White)	76120022
3-1	Counterbalance Retaining Screw	76240301
3-2	Tone Arm (Black)	76180150
3-2	Tone Arm (White)	76180151
3-3	Pickup Mtg. Screw	76244504
3-4	Pickup Lead Assembly	76125003
3-5	Tone Arm Mtg. Plate Pivot Pin	76170408
3-6	Tone Arm Mtg. Plate	76160033
3-7	Fluon Washer (2 used)	76211851
3-8	Pickup Cable Clamp	76253216
3-9	Pickup Cable Clamp Screw	76240401
3-10	Counterbalance	76190091
3-11	Counterbalance Retaining Nut	76250014
3-12	Tone Arm Lift Cantilever	76190012
3-13	Counterbalance Spring	76200025
3-14	Weight Adj. Spring Plate	76190011
3-15	Self-Locking Nut	76246302
3-16	Wavy Washer	76166006
3-17	Tone Arm Mtg. Bracket	76190082
3-18	Cantilever Pivot Pin	76251504
3-19	Stylus Weight Adjustment Screw	76245002
3-20	Tone Arm Retaining Screw	76240401
4	Balance Arm Column (Black)	76180091
4	Balance Arm Column (White)	76180074
5	Tone Arm Rest Post (Black)	76180077
5	Tone Arm Rest Post (White)	76180079
6	Tone Arm Rest Securing Nut	76246002
7	Washer	76252001
8	Tone Arm Rest Mtg. Screw	76240001
9	Turntable Retaining Clip	76253403
10	9 1/2" Turntable Mat (Black)	76210009
10	9 1/2 Turntable Mat (White)	76210010
10	11" Turntable Mat (Black)	76210003
10	11" Turntable Mat (White)	76210014
11	9 1/2" Turntable (Grey)	76130197
11	9 1/2" Turntable (White)	76130198
11	11" Turntable (Grey)	76130195
11	11" Turntable (White)	76130200
12	9/16" Rubber Turntable Washer	76210352
13	Turntable Steel Thrust Washer	76160037
14	Turntable Thrust Bearing Assembly	76130139
15	Turntable Steel Thrust Washer	76160037
16	Dimpled Washer	76160040
17	Drive Wheel & Screw Assembly	76130157
18	Drive Wheel Retaining Screw	76244512
19	C-Clip	76528001
20	3/16" Stamped Washer	76250026
21	Drive Pinion Compression Spring	76201002
22	Idler Wheel	76140283
23	3/32" Fiber Washer	76212256
24	Idler Wheel Mtg. Screw	76240204
25	Switch Contact Separator	76213011
26	Switch Contact Strip	76112014
27	Switch Mtg. Base	76183508
28	Capacitor, Switch Shunt	250219-2
29	Switch Cover	76213011
30	Washer, Shakeproof	76252004
31	Switch Cover Mtg. Nut	76246004
32	On-Off Switch Actuator	76183509
33	Switch Actuator Mtg. Nut	76246004
34	On-Off Switch Adj. Screw	76245005
35	Washer	76250014
36	On-Off Control Knob (Low Post) (Black)	76130142
36	On-Off Control Knob (White)	76130144
36	On-Off Control Knob (Low Post) (Chrome)	76130126
36	On-Off Control Knob (Tall Post) (Black)	76130169
37	C-Clip	76252802
38	7/8" Washer	76160005
39	Inverted Hex Nut	76240401
40	Washer	76250001
41	Control Indicator	76130275
42	Speed Control Knob (Low Post) (Black)	76130160
42	Speed Control Knob (Low Post) (White)	76130161
42	Speed Control Knob (Low Post) (Chrome)	76130162
42	Speed Control Knob (Tall Post) (Black)	76130101
42	Speed Control Knob (Tall Post) (White)	76180112
43	Contact Bar Spring	76204014
44	Spindle Spigot Mtg. Screw	76245002
45	C-Clip	76528001
46	Cam Stop Lever Spring	76200021
47	Stamped Washer	76250007
48	Auto/Off Lever	76160209
49	Auto/Off Lever Spring	76204004
50	Auto/Off Cocking Lever Assembly	76130180
51	Mtg. Screw	76170001
52	Mtg. Spring	76204002
53	Mtg. Clip	76253451
54	Tone Arm Set Down Adj. Cam	76172501
55	Balance Arm Spring	76201004
56	Locking Nut	76246251
57	Tone Arm Height Adj. Screw	76244009
58	C-Clip	76252802
59	Balance Arm Locating Bracket	76164065
60	Tone Arm Pivot Tube & Nut Assembly	76130118
61	Fluon Washer	76211851
62	Tone Arm Pivot Base (Black)	76190002
62	Tone Arm Pivot Base (White)	76180074
63	1/4" Washer	76250006
64	Balance Arm Bracket Retaining Screws	76245001
65	Tone Arm Clutch Assembly	76130266
65-1	Self-Locking Nut	76246302
65-2	Clutch Mtg. Screws	76240401
65-3	3/8" Screw	76240101
67	C-Clip	76528001
68	Idler Arm Assembly	76130150
69	Switch Control Lever	76130147
70	1" Washer	76250033
71	Idler Withdrawal Pin	76170413
72	Speed Change Ramp	76160069
73	Speed Locking Spring	76203007

REF. NO.	DESCRIPTION	PART NO.
74	Speed Change Locking	76160083
75	Control Lever Assembly	76130101
76	C-Clip	76252802
77	Idler Elevator Bracket	76130149
78	Idler Elevator Tension Spring	76204013
79	Idler Elevating Spindle	76171715
80	Idler Aux. Arm Assembly	76130151
81	Idler Elevator Riveted Assembly	76130149
82	Washer	76250004
83	C-Clip	76252803
84	Motor Mtg. Grommet (3 used)	76210102
85	Motor & Mtg. Plate (Sync Type)	See Chart
85	Motor & Mtg. Plate (Non-Sync Type)	See Chart
85	Motor & Mtg. Plate (50 cps-Sync Type)	See Chart
86	3/16" Washer (3 used)	76250007
87	C-Clip (3 used)	76252803
88	Retaining Bracket (Amp-Lok)	76164018
88	Retaining Bracket (Molex)	76164057
89	Amp-Lok Retaining Clip	76205006
90	3-Pin Amp-Lok Receptacle (See Fig.)	180627-1
90	3-Pin Molex Receptacle (See Fig.)	180734-2
91	Record Spindle	76130122
91	Record Spindle (used on W605-01, 02, 03, 04)	523063-1
91-1	Record Support Pawl Spring	76214001
92	6 x 3/8" Set Screw (4 used)	76245051
93	Turntable Spigot Housing	76130121
94	On-Off Control Link	76205010
95	Control Bar Assembly	76130140
96	Washer	76250037
97	Idler Withdrawal Link	76160065
98	Idler Tension Spring	76200017
99	Auto. Operating Lever Spring	76200010
100	Auto. Operating Lever	76130148
101	C-Clip	76252803
102	Selector Pawl Lift Spring	76203003
103	Tone Arm Lift Spindle	76171702
104	C-Clip	76252803
105	Guard & Support Bracket	76160007
106	6 x 1/2" Screw (2 used)	76245001
107	C-Clip	76252802
108	Washer	76250002
109	Main Cam Gear Assembly	76130114
110	Main Cam Spindle	76171703
111	Striker Feed Lever	76160006
112	Buffer Spring	76252801
113	C-Clip	76528001
114	Height Adjustment Spring	76203001
115	Hex Nut	76246001
116	Cam Gear Locating Roller	76171203
117	C-Clip	76528001
118	Tone Arm Elevating Lever	76160012
119	Tone Arm Height Elevating Assembly	76130119
120	C-Clip	76252901
121	Striker Arm Assembly	76130108
122	C-Clip	76252803
123	Washer	76250002
124	Compression Spring	76201002
125	Drive Wheel Carrier	76130111
126	5/32" Fiber Washer	76212251
127	Drive Pinion	76190004
128	Intermediate Drive Gear	76183516
129	Washer	76250002
130	Cam Gear Roller	76171201
131	Drive Release Lever	76130107
132	C-Clip	76528001
133	Drive Release Lever Spring	76200001
134	Record Dropping Slide Assembly	76160023
135	Record Dropping Pawl Adj. Plate	76160022
136	Pawl Adj. Locking Plate	76164001
137	Pawl Adj. Screw (2 used)	76240201
138	Self-Locking Nut	76246301
139	Washer	76250018
140	Record Dropping Slide Spring	76200030
141	Muting Switch Actuator	76164007
142	Muting Switch Assembly	See Chart
143	Washer	76250018
144	6 x 3/8" Screw	76245002
145	Balance Arm Spindle	76171753
146	Washer	76250004
147	C-Clip	76528001
MISCELLANEOUS		
	Contacts for Amp-Lok Connector	180628-1
	Contacts for Molex Connector	180726-1
	Pickup Shield	636790-2
	Tone Arm Rest Lock	76166003
	Record Brush	76123001
	Base Plate Trim for W604 Versions (Gold)	150927-1
	Base Plate Trim for W604 Versions (Silver)	150927-2
	Base Plate Trim for W603 & W605 Versions	150810-2
	Base Plate Trim for W607 & W608 Versions	151052-1
	Base Plate Trim (Imperial)	150811-2
	Base Plate Trim (Micromatic)	150810-2
	45 RPM Adapter (Black)	523450-1
	45 RPM Adapter (Grey)	523450-6
	45 RPM Adapter (White)	523450-7
	45 RPM Adapter (Beige)	523450-8
	45 RPM Adapter Holder (Black)	441962-1
	45 RPM Adapter Holder (White)	441962-7
	45 RPM Adapter Holder (Gold)	441962-8
	Trim Inserts for 11" Turntable Mat (4 used)	150891-2
	Trim Disc for 11" Turntable Mat	150890-2
	Tone Arm Trim Plaque (Gold)	150655-4
	Tone Arm Trim Plaque (Gold & Silver)	150655-3
	Tone Arm Trim Plaque (Silver)	151050-1
	Remote Reject Solenoid Assembly (110V)	
	(See Note)	701146-2
	Remote Reject Solenoid Assembly (24V)	
	(See Note)	701146-1

NOTE: 701146-1 used on Changers in Imperial Stereo Models.

701146-2 used on Changers in Stereo Theatre TV Models.

RECORD PLAYER MODEL VARIATIONS

9 1/2" GRAY TURNTABLE & BASEPLATE
150810-2 BASEPLATE TRIM, BLACK TONE ARM

Model No.	Mute Switch	Control Knobs		Motor Assembly	Balance Arm
		Speed	On-Off		
602-03-00	170584-1	76130101	76130169	76110057	76190048
603-01-00	170584-1	76130160	76130142	76110010	76190048
603-02-00	170584-1	76130101	76130169	76110010	76190048
603-03-00	170584-1	76130160	76130142	76110010	76190048
603-04-00	170584-1	76130101	76130169	76110010	76190048
603-05-00	170584-1	76130160	76130142	76110010	76190048
603-06-00	170584-1	76130101	76130169	76110010	76190048
603-06-01	170584-1	76130101	76130169	76110010	76190048
603-07-00	170584-1	76130160	76130142	76110010	76190048
603-08-00	170584-1	76130101	76130169	76110010	76190048
603-10-00	170584-1	76130160	76130142	76110010	76190048
603-10-01	170584-1	76130160	76130142	76110010	76190048
603-11-00	None	76130101	76130169	76110010	76190048
603-15-01	170584-1	76130101	76130169	76110010	76190048
603-15-02	76130128	76130101	76130169	76110010	76190048
603-16-01	170584-1	76130160	76130142	76110010	76190048
603-16-02	76130128	76130160	76130142	76110010	76190048
603-18-01	170584-1	76130101	76130169	76110010	76190048
603-18-02	76130128	76130101	76130169	76110010	76190048
603-19-01	170584-1	76130160	76130142	76110010	76190048
603-19-02	76130128	76130160	76130142	76110010	76190048
603-24-01	170584-1	76130101	76130169	76110010	76190048
603-25-00	170584-1	76130101	76130169	76110010	76190048
603-25-01	76130128	76130101	76130169	76110010	76190048
603-28-00	170584-1	76130160	76130142	76110010	76190048
603-28-01	76130128	76130160	76130142	76110010	76190048
603-29-00	76130128	76130160	76130142	76110010	76190048
603-30-00	76130128	76130101	76130169	76110010	76190048
603-31-00	76130128	76130160	76130142	76110010	76190048
603-32-00	76130128	76130101	76130169	76110010	76190048
605-01-00	170584-1	76130160	76130142	76110014	76190048
605-01-01	76130128	76130160	76130142	76110014	76190048
605-02-00	170584-1	76130101	76130169	76110014	76190048
605-02-01	76130128	76130101	76130169	76110014	76190048

RECORD PLAYER MODEL VARIATIONS (CON'T)

11" GRAY TURNTABLE & BASEPLATE
150927-2 BASEPLATE TRIM, BLACK TONE ARM

Model No.	Mute Switch	Control Knobs Speed On-Off		Motor Assembly	Balance Arm
604-01-00	170584-1	76130101	76130169	76110057	76190048
604-02-00	170584-1	76130101	76130169	76110057	76190048
604-05-00	170584-1	76130101	76130169	76110057	76190048
604-05-01	170584-1	76130101	76130169	76110057	76190049
604-05-02	170584-1	76130101	76130169	76110057	76190049
604-05-03	76130128	76130101	76130169	76110057	76190049
604-06-00	170584-1	76130101	76130169	76110057	76190048
604-06-01	170584-1	76130101	76130169	76110057	76190049
604-06-02	170584-1	76130101	76130169	76110057	76190049
604-06-03	76130128	76130101	76130169	76110057	76190049
604-07-00	170584-1	76130162	76130126	76110057	76190019
604-07-01	76130128	76130162	76130126	76110057	76190019
604-08-00	170584-1	76130162	76130126	76110057	76190019
604-08-01	76130128	76130162	76130126	76110057	76190019
604-09-00	170584-1	76130162	76130126	76110057	76190048
604-09-01	170584-1	76130162	76130126	76110057	76190049
604-09-02	170584-1	76130162	76130126	76110057	76190049
604-10-00	170584-1	76130162	76130126	76110057	76190019
604-10-01	76130128	76130162	76130126	76110057	76190019
604-11-00	170584-1	76130101	76130169	76110057	76190049
604-11-01	76130128	76130101	76130169	76110057	76190049
604-12-00	170584-1	76130101	76130169	76110057	76190049
604-12-01	76130128	76130101	76130169	76110057	76190049
606-01-00	170584-1	76130101	76130169	76110014	76190049
606-01-01	76130128	76130101	76130169	76110014	76190049

9 1/2" WHITE TURNTABLE & BASEPLATE
150927-2 BASEPLATE TRIM, WHITE TONE ARM

Model No.	Mute Switch	Control Knobs Speed On-Off		Motor Assembly	Balance Arm
607-03-00	76130128	76180112	76130144	76110010	76190050
607-04-00	76130128	76180112	76130144	76110010	76190050
607-05-00	76130128	76180112	76130144	76110010	76190050

11" WHITE TURNTABLE & BASEPLATE
150927-2 BASEPLATE TRIM, WHITE TONE ARM

Model No.	Mute Switch	Control Knobs Speed On-Off		Motor Assembly	Balance Arm
608-01-00	76130128	76130162	76130126	76110057	76190019

